

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A process for controlling welding of an element to a component by a welder, the process comprising:

(a) determining an energizing height;

(b) lifting the element to a height;

~~(d) detecting the height as the element is lifted;~~

~~(e)~~(c) energizing the welder at the energizing height to create a welding arc;

~~(f)~~(d) welding the element to the component for a specified time;

~~(g)~~(e) lowering the element in relation to the component;

~~(h)~~(f) detecting the height as the element and the component are welded together; and

~~(i)~~(g) turning off the energy to the welder after the specified time;

wherein the specified time is controlled as a function of step (f) and a predetermined speed of step (e).

2. (Original) The process of Claim 1, wherein the element is a metal stud and the component is a metal sheet.

3. (Original) The process of Claim 2, wherein the metal stud and the metal sheet are parts of a motor vehicle.

4. (Currently Amended) The process of Claim 1, wherein the predetermined speed of the lowering is constant regardless of ~~[[the]]~~ a speed of the lifting.

5. (Currently Amended) The process of Claim 1, ~~wherein the specified time is controlled by the lowering speed~~ further comprising feeding the element into the welder.

6. (Currently Amended) The process of Claim 1, wherein the energizing height is maintained until the initiation of the lowering the ~~elements~~ element.

7. (Currently Amended) The process of Claim 1, wherein the predetermined speed of the lowering is controlled as a factor of a speed of the lifting.

8. (Currently Amended) A process for welding an element to a component using a feed unit and a welding head, the process comprising:

(a) feeding the element from the feed unit to the welding head;

(b) moving the element along a substantially linear path from the component to a first location;

(c) detecting a distance that the element was moved;

(d) energizing the welding head;

(e) welding the element to the component for a specified time; and

(f) ~~retracting~~ lowering the element ~~relative to~~ toward the component;

[[and]]

(g) stopping energy to the welding head at an end of the specified time.

wherein the specified time is controlled by a speed lowering the element,

wherein the speed is controlled as a function of at least the distance.

9. (Original) The process of Claim 8, wherein the component is a body panel.

10. (Original) The process of Claim 9, wherein thickness of the body panel is about 0.5 mm.

11. (Original) The process of Claim 9, wherein the body panel is part of a motor vehicle.

12. (Currently Amended) The process of Claim 8, further comprising continually detecting the distance during ~~the entire~~ substantially an entirety of the specified time.

13. (Currently Amended) The process of Claim 12, further comprising initiating ~~retracting~~ lowering the element toward the component while holding the arc welding at a constant electrical voltage is based on the detected distance.

14. (Original) The process of Claim 8, wherein the element is a metal stud.

15. (Original) The process of Claim 8, wherein the component is a metal sheet.

16. (Currently Amended) The process of Claim 8, further comprising controlling ~~[[the]]~~ a speed of the ~~retracting~~ lowering the element toward the component as a factor of a speed of the moving the element along a substantially linear path.

17. (Currently Amended) The process of Claim 8, ~~further comprising~~ controlling of the specified time by the retracting speed wherein a speed of the controlling speed decreases as the distance of the element relative to the component decreases.

18. (Currently Amended) The process of Claim 8, further comprising maintaining the distance until the initiation of the ~~retracting~~ lowering.

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Cancelled)

34. (Cancelled)

35. (Cancelled)